

Patent Claims

1. Semi-conductor component in which a first semi-conductor material (1) with a first lattice constant is combined with a second semi-conductor material (2) with a second lattice constant within one and the same semi-conductor body (3), and the first and second lattice constants are different, and the second semi-conductor material (2) is more highly dopable than the first semi-conductor material (1), and in which the first semi-conductor material (1) forms a matrix (4) in at least a portion of its area in which a number of layers (6) with sub-monolayer islands (5) containing the second semi-conductor material (2) are embedded, and whose separations from one another decrease toward the main surface (7) of the semi-conductor body (3), characterized in that the doping level of the main surface (7) is greater than 10^{19} cm^{-3} .
2. Semi-conductor component as in Claim 1, characterized in that a layer (8) consisting of the second semi-conductor material (2) is provided on the main surface (7) completely covering this main surface.
3. Semi-conductor component as in Claim 1 or 2, characterized in that the first semi-conductor material (1) includes ZnSe, and the second semi-conductor material includes (ZnTe).
4. Semi-conductor component as in Claim 2 or in Claim 2 or 3, characterized in that the thickness of the layer (8) completely covering the main surface (7) is less than 10 nm.

SUBSTITUTE SHEET

Patent Claims

1. Semi-conductor component in which a first semi-conductor material (1) with a first lattice constant is combined with a second semi-conductor material (2) with a second lattice constant within one and the same semi-conductor body (3), and the first and second lattice constants are different, characterized in that the first semi-conductor material (1) forms a matrix (4) in at least a portion of its area in which a number of sub-monolayer islands (5) containing the second semi-conductor material (2) are embedded.
2. Semi-conductor component as in Claim 1, characterized in that the second semi-conductor material (2) is more highly dopable than the first semi-conductor material (1) of the matrix (4).
3. Semi-conductor component as in Claim 1 or 2, characterized in that a number of layers (6) with sub-monolayer islands (5) is arranged within the matrix (4) so that the separations from them decrease toward a main surface (7) of the semi-conductor body (3).
4. Semi-conductor component as in Claim 3, characterized in that a layer (8) consisting of the second semi-conductor material (2) is provided on the main surface (7) completely covering this main surface.
5. Semi-conductor component as in one of Claims 1 through 4, characterized in that the first semi-conductor material (1) includes ZnSe, and the second semi-conductor material (2) includes ZnTe.
6. Semi-conductor component as in Claim 4 or Claims 4 and 5, characterized in that the thickness of layer (8) completely covering the main surface (7) is less than 10 nm.